

Ind 47

STATE OF WISCONSIN)
) SS
DEPARTMENT OF INDUSTRY,)
LABOR AND HUMAN RELATIONS)

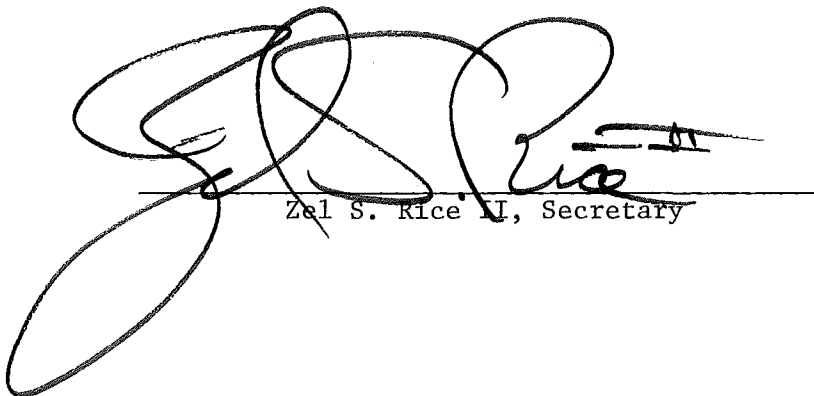
TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETINGS:

I, Zel S. Rice II, Secretary of the Department of Industry, Labor and Human Relations, and custodian of the official records of said department, do hereby certify that the attached rules to Wisconsin Administrative Code Chapter Ind 47--Amusement Rides and Devices Code, were adopted by this department on April 17, 1978.

I further certify that said copy has been compared by me with the original on file in this department and that the same is a true copy thereof and of the whole of such original.

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3:15 pm
REVISOR OF STATUTES
BUREAU CLT

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the official seal of the department at the Capitol, in the City of Madison, this 17th day of April, A.D., 1978.


Zel S. Rice II, Secretary

ORDER OF
DEPARTMENT OF INDUSTRY, LABOR AND HUMAN RELATIONS

Pursuant to authority vested in the Department of Industry, Labor, and Human Relations by sections 101.01 to 101.20, Wis. Stats., the Department of Industry, Labor and Human Relations hereby repeals, creates and adopts rules of Wisconsin Administrative Code Chapter Ind 47--Amusement Rides and Devices Code.

The rules attached hereto shall become effective on the first day of the month following publication in the Wisconsin Administrative Register as provided in section 227.026, Wis. Stats.

CHAPTER IND 47
AMUSEMENT RIDES AND DEVICES

Section Ind 47.02 is repealed and recreated to read:

Ind 47.02 DEFINITIONS.

- (1) Amusement area. An amusement area means the area occupied by an enterprise that is principally devoted to offering amusement, exhibits or entertainment to the public. Amusement areas may be located at permanent sites, such as amusement parks, or may be moved from site to site, such as carnivals. All structures that receive electrical power from an independent source, which also serves amusement rides and attractions, are included within the amusement area.
- (2) Amusement attraction. Amusement attraction means any game of skill, show, exhibition or non-amusement ride entertainment device.

Note: Non-amusement ride entertainment devices include shows, joints, exhibitions, pillow bounces, giant slides, walk-throughs without moving parts such as glass houses, and similar devices.
- (3) Amusement devices. Amusement devices means any object in or associated with an amusement area that could be expected to contribute to injury.

Note: Amusement devices include rides, attractions, concession stands, light towers, power-generating and distributing systems, decorations, signs, speaker systems, and similar devices.
- (4) Amusement rides. Amusement rides means devices that carry frequenters in unusual, entertaining or thrilling modes of motion and vehicles providing entertainment or transportation to, from and within an amusement area.

Note: Amusement rides include rider-powered and power-driven thrill rides, mild rides and ride-throughs, walk-throughs with moving parts, and animal rides. Vehicles include parking lot trams, old fire engines, stage coaches, trackless trains and similar vehicles.
- (5) Approved. Approved means approved by the department.
- (6) Authorized persons. Authorized persons are persons experienced and instructed in the work to be performed and who have been given the responsibility to perform their duties by the owner/operator.
- (7) Concession stand. A concession stand is a structure associated with an amusement area in which food and other goods are sold.
- (8) Critical parts. Critical parts are those parts of amusement rides whose failure could result in serious personal injury.
- (9) Department. Department means the department of industry, labor and human relations.
- (10) Fair. A fair means an enterprise principally devoted to the exhibition of the products of agriculture or industry and often includes amusement rides and attractions.

- (11) Modified ride. Modified ride means an amusement ride whose structure, drive system, storage during transportation, method of erection, or other items affecting the safety of the ride have been changed, except changes recommended by a manufacturer of class 1, 2 or 3 rides.
- (12) Owner/operator. Owner/operator means the person holding legal title to the amusement ride or attraction, the designated representative, lessee or person responsible for the operation of the ride or attraction.
- (13) Passenger space. Passenger space means the area, space, seat, tub, chair, car, cage or other device where the customer sits, stands, walks or otherwise occupies while frequenting an amusement ride or attraction.
- (14) Professional engineer. A professional engineer is an engineer who is registered in the state of Wisconsin.
- (15) Properly maintained. Properly maintained means assembling, disassembling, transporting and operating amusement rides and devices in accordance with the manufacturer's recommendations, nationally recognized standards, and recognized practice. Properly maintained also means lubricating, greasing, oiling, testing and repairing of parts at specified time intervals in accordance with the recommended practices and procedures.
- (16) Serviceability. Serviceability means that a ride has been erected, maintained and repaired in accordance with recognized practice, and critical parts are not weakened by abnormal wear or cracks, improper repair, or other conditions.

Section Ind 47.03 is created to read:

Ind 47.03 REGISTRATION.

- (1) Scope. All amusement rides shall be registered with the department each calendar year. The fee, as set forth in Wis. Adm. Code chapter Ind 69, shall be paid and the rides shall be registered prior to being opened to the public.
- (2) Information required. The following information for registration shall be provided on form SBD-5292, which will be provided by the department:
 - (a) Name and address of owner, operator or lessee if different from owner.
 - (b) Descriptive name, model and serial number of the ride, and name and address of manufacturer.
 - (c) Description of modifications and name and address of modifier.
 - (d) Route, i.e., places and dates on which the ride will be operated in the state. If the itinerary is incomplete or changes occur, the department shall be notified prior to operation on the adjusted route.
 - (e) Proof of worker's compensation coverage and ability to pay liability damages arising out of the handling, maintenance or use of amusement devices, such as evidence of insurance coverage.

- (3) Additional information. Additional information required by the department shall be provided as requested.

Note: The department will request information required for proper classification of rides unfamiliar to the department or rides with unfamiliar modifications, and other information related to safe operation, such as, but not limited to, maintenance and inspection records and certification of pressure vessels.

- (4) Modified amusement rides. Amusement rides modified since the last registration shall not be operated until the department has been provided with information to determine the proper maintenance and test class and the owner/operator has obtained a new registration certificate.
- (5) Amusement ride registration refusal. Amusement rides with outstanding inspection fees or unabated orders shall not be registered by the department.
- (6) Posting of certificate. The registration certificate shall be posted on the ride so that it is visible during ride operation and transportation.

Section Ind 47.04 is created to read:

Ind 47.04 CLASSIFICATION OF RIDES FOR TYPE OF INSPECTIONS AND TESTS REQUIRED.

- (1) Scope. Amusement rides will be categorized in one of 4 classes in accordance with known characteristics of the ride and its modification(s). The department may request additional information for modified rides and for rides unfamiliar to the department. Rides will be assigned to class 4 when requested information is not supplied as requested.
- (a) The department will notify the owner/operator of the class to which the rides have been assigned and the inspections and tests that will be required.
- (b) The department will reclassify rides if the rides fail to continue to meet the criteria for which they were classified.
1. Only rides that are initially, or upon reclassification, assigned to class 4 shall be required to comply with the requirements of section Ind 47.10.
- (2) Ride classification criteria. Rides shall be classified in accordance with the following criteria:
- (a) Unmodified rides. 1. Class 1. Class 1 consists of properly designed, constructed and maintained rides that move passengers in a mild manner such that a failure would probably not cause serious injury.

Note: It is intended that class 1 include such rides as merry-go-rounds, ride-throughs and non-lifting kiddie rides.

2. Class 2. Class 2 consists of properly maintained rides which do not qualify for class 1, but the same manufacturer's model has been proven to be free from defects by 10 years of field service and the ride is recognized to be safe by insurance carriers, owner/operators, and the department.

3. Class 3. Class 3 consists of rides which do not qualify for class 1 or class 2 but are designed and constructed in accordance with an engineering analysis acceptable to the department and are tested to verify the analysis. Documentation of such analysis and testing shall be filed with and accepted by the department.
 4. Class 4. Class 4 consists of those rides which do not meet the requirements for the other 3 classes.
- (b) Modified rides. Modified rides will be classified using the same procedure as unmodified rides.
1. In order to be included in class 3, the design, analysis and tests of modified rides must consider the effect of the modification on the entire ride during assembly, operation, disassembly and transportation.

Section Ind 47.09 is created to read:

Ind 47.09 PERIODIC INSPECTIONS AND OPERATIONAL TESTS. The owner/operator shall arrange for all rides and attractions to be subjected to periodic inspections and operational tests. Such inspections and tests shall be documented by written records and the records shall be kept as required in section Ind 47.13 (2).

- (1) Inspection at assembly. A visual inspection for defect shall be made at assembly. Inspection of all fastening devices shall be made to assure that fasteners recommended by the manufacturer have been properly installed.
- (2) Daily inspection and operational tests. Amusement rides and attractions shall be inspected and their operation tested each day before used by passengers or frequenters. The inspection and operational test shall include the operation of all control devices, speed-limiting devices, brakes and other equipment provided for safety.

Section Ind 47.10 is repealed and recreated to read:

Ind 47.10 TESTING OF RIDES ASSIGNED TO CLASS 4. Rides assigned to class 4 shall be load tested prior to initial operation. Immediately following the load test, all critical parts shall be tested for serviceability. The documentation of these tests shall be accepted by the department before the ride is opened to the public in Wisconsin. The test and the documentation shall be performed every 6 years. The test shall be performed in accordance with (3) of this section.

- (1) Balanced load test. The capability of the ride to operate through a normal cycle with all passenger spaces loaded to 1-3/4 times the rated passenger weight shall be demonstrated through test. The test weights shall have approximately the same center of gravity as the expected passenger. The capability of rides which will not operate with 1-3/4 times rated load shall be demonstrated through verified engineering analysis as specified in Ind 47.04 (2) (a) 3.

Note #1: A method of estimating passenger load is presented in Appendix A.

Note #2: Individuals conducting balanced load tests should exercise extreme caution and care in planning and conducting such tests in order to prevent accidental injury of viewers and bystanders.

- (2) Unbalanced load test. An "unbalanced load" or a "static" test in accordance with either (a) or (b) below shall be conducted on all rides. If tipping is imminent during the test, the ride has failed the test and may not be operated unless a positive means to prevent unbalanced loading, acceptable to the department, is provided. If the ride is not capable of operation with the specified unbalanced load, the stability of the ride shall be proved by operating the ride under its maximum unbalanced load capacity.
- (a) Unbalanced load tests for stability shall be accomplished by loading the portion of the passenger spaces which cause maximum unbalance and operating the ride at normal speeds. The weight in each of these selected passenger spaces shall be at least equal to the weight of passengers that could reasonably be carried in the space.
- (b) Static tests for stability shall be accomplished by applying forces equal in direction and magnitude to the calculated greatest unbalance force that will occur during testing by unbalanced loads.
- Note: The ride is not in motion during static stability tests. Forces are exerted and measured via attachments to the earth.
- (3) Documentation. Class 4 rides shall not be opened to the public until documentation of successful completion of tests, in accordance with (1) and (2) above and in accordance with Ind 47.11 (2) (b), have been accepted by the department.

Section Ind 47.11 is repealed and recreated to read:

Ind 47.11 TEST FOR SERVICEABILITY.

- (1) Scope and nature of tests. A nondestructive test (such as, but not limited to, magniflux, x-ray, dye or sonic) of critical parts of amusement rides shall be performed in accordance with the test period and implementation program presented in this section.
- Note #1: The purpose of these tests is to prevent catastrophic failure by using sensitive nondestructive tests to detect deterioration of critical parts of amusement rides.
- Note #2: Manufacturers and other recognized authorities are encouraged to submit a list of parts that require testing and appropriate means and time between tests. When available, this list will be made available to the ride owner/operator.
- (2) Test period.
- (a) Classes 2 and 3. The critical parts of all class 2 and class 3 amusement rides shall be tested for serviceability every 3 years or 3,000 hours of operation, whichever comes first, or at testing intervals recommended by the manufacturer.
- (b) Class 4. The critical parts of all class 4 amusement rides shall be tested for serviceability immediately following each required load test and every 2 years or 2,000 hours of operation, whichever comes first.

- (3) Record of tests. The method and results of the test shall be documented by a qualified person, such as a professional engineer, acceptable to the department. Test documentation shall be maintained and made available to the department in accordance with the requirements of section Ind 47.13 (2).
- (4) Implementation of program for class 2 and 3 rides. A test program for class 2 and class 3 rides shall be scheduled when a show first becomes subject to these rules and implemented over the next 3 years.
 - (a) A list of owned and booked-in rides, with an estimate of operating time since each ride was constructed, factory rebuilt or tested, shall be submitted to the department when the rides are registered.
 - (b) The ride list shall be arranged according to operating hours and divided into 3 groups of approximately equal number. All the rides in the group with the most operating hours shall be tested before operation in the next calendar year. Rides in the 2 remaining groups shall be tested before operation in 2 subsequent years; the group with the most operating hours first, thereby establishing a program where approximately 1/3 of the rides are tested each year.
 1. Exception. A properly maintained new or factory rebuilt ride need not be tested until 5 years or 5,000 hours of operation after construction or rebuilding, whichever comes first.
 - (c) Rides new to the show after a test program has been scheduled shall be tested before operation.
 1. Exception. Properly maintained rides need not be tested until 5 years or 5,000 hours of operation after construction, factory rebuilding or acceptable test, whichever comes first, provided such maintenance is documented and accepted by the department.
- (5) Implementation of program for class 4 rides. After initial load testing, an implementation program for class 4 rides, similar to that outlined in (4), shall be scheduled for the time period as specified in (2) (b) of this section.

Section Ind 47.12 is repealed.

Section Ind 47.13 is created to read:

Ind 47.13 MAINTENANCE AND RECORD-KEEPING.

- (1) Maintenance. (a) Defective conditions noted during the inspections and tests, or by a department safety specialist, shall be corrected.
 - (b) Modifications to improve ride safety recommended by the manufacturer and recognized standards shall be made.
 - (c) Repairs and modifications to the ride shall be made in accordance with the following:
 1. Repairs and modifications shall be in accordance with the manufacturer's recommendations when available. In the absence of manufacturer's recommendations, repairs and modifications shall be in accordance with recognized good practice.

2. Welds of critical parts shall be made by a certified welder qualified for the type of welding performed. Welding shall be performed in accordance with written procedures supplied by the ride manufacturer.
 - a. Welders shall be certified in accordance with the requirements of section Ind 53.53 of Wis. Adm. Code chapters Ind 50-64--Building and Heating, Ventilating and Air Conditioning Code.
 3. Welds on noncritical parts shall be made by persons trained in proper welding techniques.
 4. The size and type of welding rod and methods of application shall be appropriate for the materials joined; the weld shall have proper penetration without undercutting and shall have the appearance of a good weld.
- (d) Improperly maintained, repaired or modified rides will be reclassified by the department in accordance with section Ind 47.04 (1) (b).

(2) Record-keeping.

- (a) A written record of inspections, tests, repairs and hours of operation since the last test for serviceability of critical parts shall be maintained for a period of at least 7 years and shall be made available to the department on request. Records for at least the 30 previous days of operation shall be kept with the ride.
 1. The department will not register a ride unless records are kept of all its operations, including those in other states and countries.
 - a. Exception. The first year a show becomes subject to these rules an affidavit stating that the rides have been well maintained or properly repaired will be sufficient for registration.

Note: As a minimum, form SBD-5292 may be used as the affidavit.

- (b) An authorized person shall attest to the accuracy of the records and shall sign such records.

Subsection Ind 47.15 (2) is amended to read:

- (2) Quality of assembly work. Parts shall be properly aligned and shall not be bent, distorted, cut or otherwise damaged to force a fit. Parts requiring lubrication shall be lubricated in the course of assembly. Parts excessively worn or materially damaged shall not be used. Fastening and locking devices shall be installed where required for dependable operation.

Subsection Ind 47.15 (3) is repealed.

Section Ind 47.30 is repealed and recreated to read:

Ind 47.30 CONTROL OF OPERATIONS.

- (1) Operation of amusement rides, other than passenger-operated or controlled, shall be by authorized persons at least 18 years of age.
 - (a) Ride operators shall be in the immediate vicinity of the operating controls at all times during normal operations and shall carefully watch to prevent dangerous actions by the riders and to detect apparent impending mechanical failure.
 - (b) Rides designed to carry children weighing 75 pounds or less shall be provided with a minimum of one ride operator per ride during the operating cycle of the ride. Ride operators shall keep the ride controls under their direct supervision during the operating cycle of the ride and shall carefully watch to prevent dangerous actions by the riders.

Note: The intent of this rule is not to prohibit one ride operator from supervising several rides. However, only one ride per operator may be operating at any one time.
 - (c) All control devices shall be guarded against accidental operation.
- (2) Unauthorized persons shall not operate amusement rides except during emergencies.
 - (a) Clear, simple emergency-stopping instructions shall be printed on durable material and conspicuously posted near the controls.
- (3) Passenger-operated or controlled amusement rides shall have the controls located where they are readily available for use whenever the ride is in operation.
 - (a) Clear, verbal instructions for controlling the ride shall be given to all passengers.
 - (b) Clear, written instructions for controlling the ride shall be printed on durable material and conspicuously posted.
- (4) A means to prevent accidental or mischievous operation of amusement rides shall be provided.
 - (a) Unattended ride controls shall be arranged such that accidental or mischievous operation will not occur.

Note: Locked control panel covers, key switching, remote "carry-with-operator" controls and similar devices satisfy the intent of this rule.

Section Ind 47.35 is amended to read:

Ind 47.35 AIR COMPRESSORS AND EQUIPMENT. Air compressors, air compressor tanks and equipment used in connection therewith, shall be constructed, equipped and maintained as covered by the Wis. Adm. Code chapter Ind 41 (Boiler and Pressure Vessel Code). The equipment shall be inspected and tested at least once a year by persons authorized by the department. A record of each inspection shall be kept by the owner and/or manager on the premise where equipment is located and shall be made available on request by the department.

Section Ind 47.60 is repealed and recreated to read:

Ind 47.60 ACCIDENT REPORTING. Injuries that require treatment by licensed professional medical personnel or are recorded at a first aid station shall be reported to the department. A copy of the owner's report to the insurance carrier will be sufficient, but it should include suggestions for prevention of similar accidents.

Section Ind 47.61 is created to read:

Ind 47.61 RETROACTIVITY. The rules of this chapter shall apply to all amusement rides and devices now in existence and to those amusement rides and devices hereafter constructed.

APPENDIX A

A-47.10 (2) (a) SAFETY FACTOR. The anthropometric data presented in reference 1 indicates correlation between hip width and body weight. Assuming that the hip width determines the number of persons that can occupy an amusement ride passenger space, their total weight can be estimated from hip width vs. body weight data if the dimensions of the space are known.

Figure 1 presents a conservative estimate of hip width vs. body weight for the American public. This data should be used to determine the weight to be placed in each passenger space when an amusement ride is load tested in accordance with section Ind 47.10.

Example of the use of this data:

Rated capacity of space. 3 adults
Hip space. 46 inches
Hip space per person $\frac{46}{3} = 15.33$ inches
Corresponding body weight. 187 pounds (see Figure 1)
Total load weight = $3 \times 187 \times 1.75 = 981.75$

Reference 1: "Personnel Guardrails for the Prevention of Occupational Accidents," Document No. NBSIR 76-1132, Center for Building Technology, Institute of Applied Technology, National Bureau of Standards, Washington, D. C. 20234, July 1976, Final Report.

DATA FOR ESTIMATING WEIGHT OF ADULT MALE PASSENGERS
THAT CAN REASONABLY OCCUPY SPACE ON AMUSEMENT RIDES

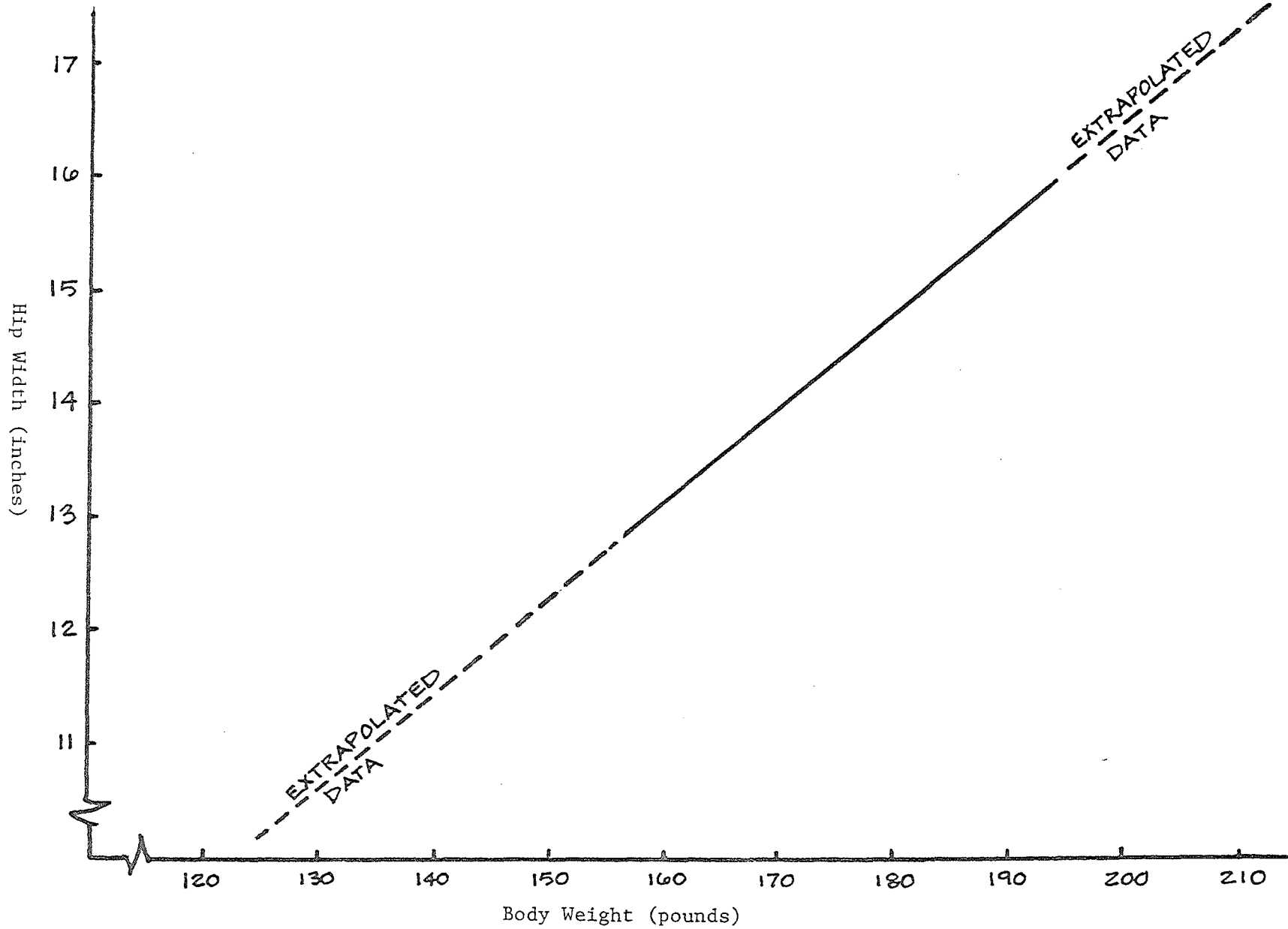


Fig. 1